

# Genetics

## Could a Potential Program Obtain Bison From Source Herds That Are Considered Free of Cattle Gene Introgression Based On Current Testing Technology?

The majority of bison have some level of cattle gene introgression due to historic attempts to hybridize bison and domestic cattle.

There are limited source herds that are considered free of cattle gene introgression including Yellowstone National Park and Elk Island National Park in Alberta.

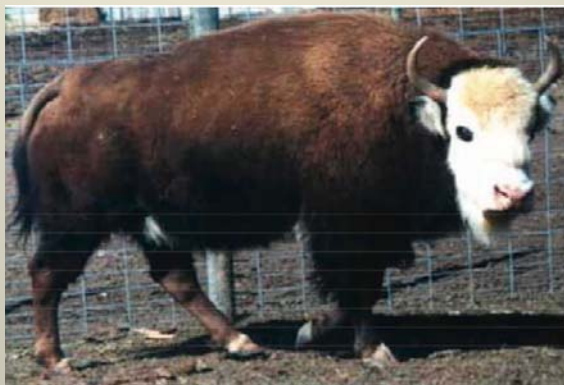
While free-ranging bison do not readily breed with domestic cattle, breeding can occur between the two species in captive and artificial settings.

## How Large Do Herds Need to be for Genetic Preservation?

Geneticists (Dratch and Gogan, 2010) recommend that in order for a population to be considered of sufficient size for genetic purposes there should be over 1,000.

## Could Genetic Diversity be Managed Through Active Management of Smaller Herds?

If a potential restoration area is not suitable for populations of over 1,000 bison, it would be important to develop a metapopulation structure that allows for movement of individual bison between herds, thus allowing for a flow of genetic variation (Dratch and Gogan, 2010).



**Montana Fish,  
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